

# **EM SSAB CHAIRS MEETING**

## **Updates from the Office of Regulatory & Policy Affairs (EM-4)**

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## COVID-19

- DOE and its labs continue to help fight the pandemic.
- EM continues to maintain maximum telework, and growing familiarity with virtual platforms could be a boon for **increased engagement**.

Current DOE Operating Status: Maximum Telework

### Latest News

**Neutrons reveal unpredicted binding between SARS-CoV-2, hepatitis C antiviral drug**  
Scientists have found new, unexpected behaviors when SARS-CoV-2...

**Solving a Genetic Mystery at the Heart of the COVID-19 Pandemic**  
Computational biologists dig into the origins of the single unique protein...

**Oak Ridge National Laboratory joins ATOM Consortium to Accelerate Drug Discovery**  
The Accelerating Therapeutics for Opportunities in Medicine , or ATOM...

### Explore the DOE National Labs' Latest Initiatives to Fight COVID-19



- **Mission**

- To complete the safe clean-up of the environmental legacy brought about from decades of nuclear weapons development and government-sponsored nuclear energy research.

- **Priorities**



1

## Achieve Significant Construction Project Milestones

- EM successfully started up the Salt Waste Processing Facility
- Began construction on the WIPP utility shaft
- Completed Direct Feed Low Activity Waste construction turnover to commissioning
- Completed demolition of the High Flux Beam Reactor at Brookhaven

2

## Execute Key Projects that Enable the EM Cleanup Mission

- Completed Plutonium Finishing Plant demolition at Hanford
- Removed all remaining contaminated buildings at ETTP
- Removed 11 million cumulative tons of debris from Moab
- Began removing the remaining legacy buildings from the Energy Technology Engineering Center
- Began demolition activities for the Pool Type Reactor at Lawrence Livermore National Lab

EM Sites

Completed Sites  
In-Progress Sites

## 3

### Reduce the EM Complex Footprint

- Completed transfer of the Separations Process Research Unit to Naval Reactors
- Completed transfer of the Tonopah Test Range to the Office of Legacy Management

## 4

### Award Contracts that Enable Accelerated Progress

- EM awarded the following contracts:
  - Hanford
  - Nevada
  - Paducah
  - Savannah River National Lab
- Partially completing new contracts at Idaho, Savannah River, and Portsmouth





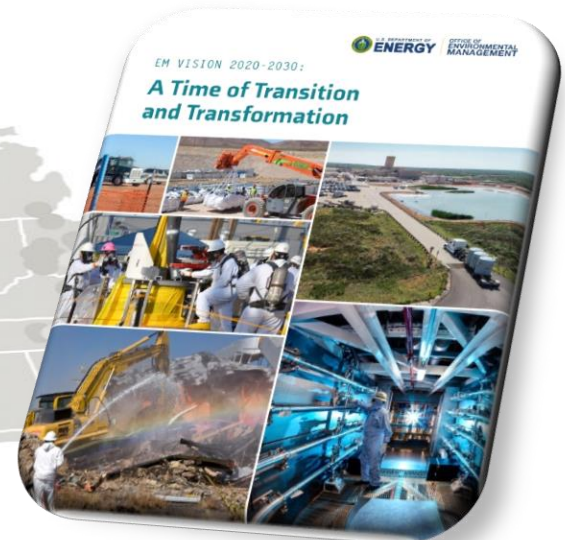
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## Drive Innovation and Improved Performance

- Completed the NEPA analysis for the Savannah River Site DWPF wastewater recycle waste stream

### EM Sites

- Issued an EM-wide Strategic Vision
- Issued program and project management policies that drive improved performance and risk management



- Completed Sites
- In-Progress Sites

- Given the **sensitive nature** of EM operations, DOE has a responsibility to maintain **clear lines of communication**.
- Communication channels permit **two-way information sharing**.
- Strategic engagement can **reduce public uncertainty** and build trust.
- Greater information leads to **improved decision-making and cooperation**.
- **Stakeholder support increases** when there is effective, consistent, and meaningful consultation.



## Objectives

- Activities to maintain a safe, secure, and compliant posture
- Radioactive tank waste stabilization, treatment, and disposal
- Spent (used) nuclear fuel and nuclear materials management and disposition
- TRU and mixed low-level waste (MLLW) disposition
- Soil and groundwater remediation
- Excess facilities deactivation and decommissioning (D&D)





# EM Vision (2021 – 2031)



**Savannah River Site**



**Hanford**



**Waste Isolation Pilot Plant**



# EM Vision (2021 – 2031)



Portsmouth

Oak Ridge





**Moab**



**Paducah**

## Strategic Initiatives

- Safety and Security
- Program and Project Management
- Acquisition
- Regulatory / Stakeholder Engagement
- Infrastructure
- Next-Generation Workforce
- Innovative Approaches
- Opportunities for Acceleration





## Per- and polyfluoroalkyl substances (PFAS)

- In the process of assessing current or past use, as well as monitoring programs for PFAS at sites to inform policy development.
- Actively engaged with federal partners (including DoD and EPA) to track research, technical aspects, and potential regulatory actions.

## Packaging & Transportation

- FY 2020 → Over 1,400 first responders trained in 92 courses through the Transportation Emergency Preparedness Program (TEPP)
- Issued Nationwide Low-Level Waste (LLW) Treatment Services, providing turnkey services for treatment, processing, and transportation of LLW
- FY 2021 → Finalizing DOE Order 460.2A, *Departmental Materials Transportation and Packaging Management*

## Regulatory Compliance

- Waste Incidental to Reprocessing → Completed NRC consultation and developing a Final Waste Incidental to Reprocessing Evaluation for Closure of Waste Management Area C at the Hanford Site.



## Regulatory | National Environmental Policy Act (NEPA)

- Support of NNSA Surplus Plutonium Disposition Program EIS and NE Versatile Test Reactor EIS
- Implementation of CEQ Final Rule



## High-Level Radioactive Waste (HLW) Interpretation

- EM issued Federal Register notices announcing intent to draft environmental assessment on the commercial disposal of SRS contaminated process equipment and a limited change to DOE Manual 435.1-1, *Radioactive Waste Manual*, to incorporate DOE's interpretation of the statutory definition of HLW.

## Waste Isolation Pilot Plant (WIPP)

- FY 2020 → WIPP received 180 shipments (300 expected over the next year, with waste shipments increasing to 7-8 per week)

## National Intergovernmental Groups

- 2020 Combined Intergovernmental Meeting held virtually (NGA, NCSL, STGWG, NAAG, ECOS, ECA hosting special topic webinars in 2021)
- Local community group meetings with EM leadership (e.g., Ohio, NM, KY)

## Advisory Boards

- Site-Specific Advisory Board meetings held virtually

## Tribal

- DOE Tribal Energy Steering Committee / Administration Tribal Engagement
- Long-Term Stewardship
  - EM, LM and NNSA's DOE-wide **LTS Working Group**
  - Focus on land transfer / data coordination / communications / info sharing
- Biden Administration Tribal Consultation
  - **DOE Tribal Listening Session** (40+ tribes)



## International

- Trilateral collaboration (US-UK-CA)
  - US DOE – UK NDA – UK NNL 18th Standing Committee Meeting (April)
  - Decommissioning Workshop, joint technology projects, lessons learned
  - Collaborative opportunities (e.g., research) with foreign governments and organizations
  - Country-specific agreements to boost information sharing
  - Participation in interagency / multinational forums and international conferences to advance cleanup efforts
  - Other EM relationships → Korea, Taiwan France



## Consortium for Risk Evaluation with Stakeholder Participation (CRESP)

- Ongoing and independent technical review and analysis from academia



# **Overview of DOE Reprocessing Waste and DOE Spent Nuclear Fuel Inventories**

# DOE Reprocessing Waste Locations

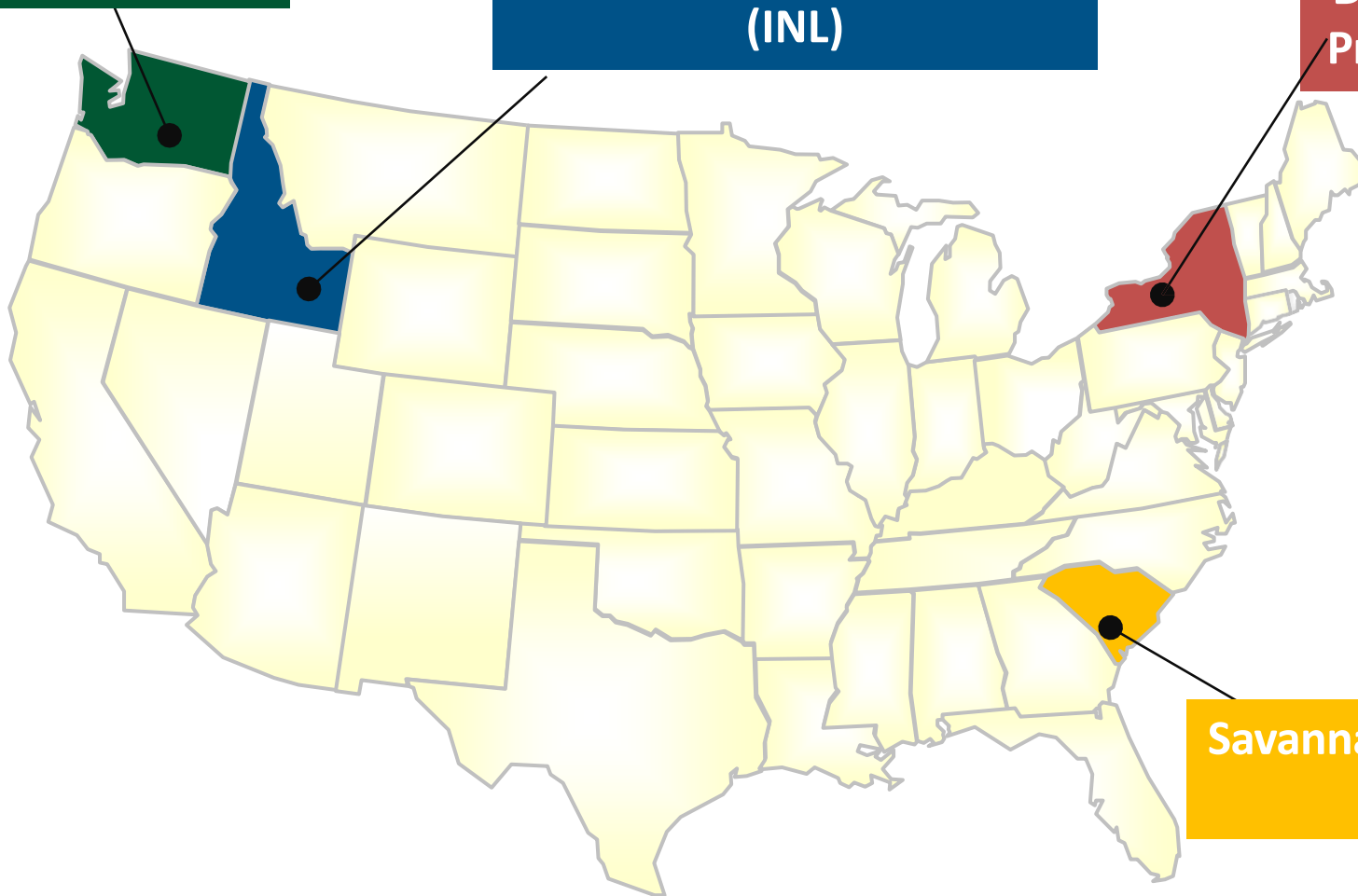
Hanford Site

Idaho National Laboratory  
(INL)

**\*West Valley  
Demonstration  
Project (WVDP)**

**\*West Valley  
reprocessing  
waste was  
generated from  
commercial  
activities and are  
not of defense  
origin.**

Savannah River Site  
(SRS)



# Reprocessing Waste Inventories

Site	Inventory	Key Facilities
<b>Hanford</b>	<ul style="list-style-type: none"> <li>• 56 million gallons of tank waste</li> </ul>	<ul style="list-style-type: none"> <li>• 177 Tanks</li> <li>• Waste Treatment and Immobilization Plant</li> <li>• Integrated Disposal Facility (low-activity waste)</li> </ul>
<b>INL</b>	<ul style="list-style-type: none"> <li>• 900,000 gallons of sodium-bearing waste</li> <li>• 4,4000 cubic meters of calcine</li> </ul>	<ul style="list-style-type: none"> <li>• Integrated Waste Treatment Unit</li> <li>• Bin sets 1-6 (calcine storage)</li> </ul>
<b>SRS</b>	<ul style="list-style-type: none"> <li>• ~4,190 glass canisters in storage</li> <li>• ~4,000 projected glass canisters</li> </ul>	<ul style="list-style-type: none"> <li>• Glass Waste Storage Buildings</li> <li>• Defense Waste Processing Facility</li> <li>• Salt Waste Processing Facility</li> </ul>
<b>WVDP</b>	<ul style="list-style-type: none"> <li>• 278 glass canisters</li> </ul>	<ul style="list-style-type: none"> <li>• Dry Cask Storage Area</li> </ul>

3

# Operating DOE & Commercial Disposal Facilities

## Hanford Site

- Onsite LLW/MLLW and Naval Reactors LLW
- Integrated Disposal Facility awaiting commissioning (onsite vitrified low-activity waste)

- All waste is disposed in accordance with each waste disposal facility's waste acceptance criteria.
- Each waste disposal site is licensed to dispose of specific waste types (see map below for examples).



★ DOE Disposal Facility    ■ Commercial Disposal Facility

CERCLA – Comprehensive Environmental Response, Compensation and Liability Act; RCRA – Resource Conservation and Recovery Act



# Recent Site Accomplishments

## Hanford



Construction completed at Low-Activity Waste Facility (vitrification)



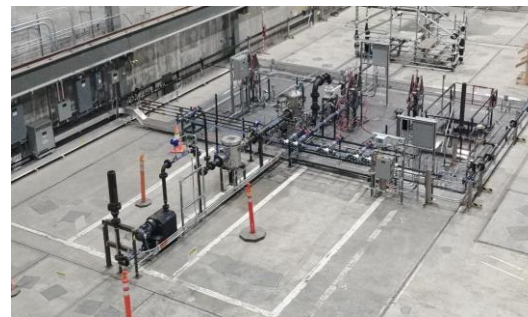
Hot Commissioning of Salt Waste Processing Facility

**SRS**

## INL

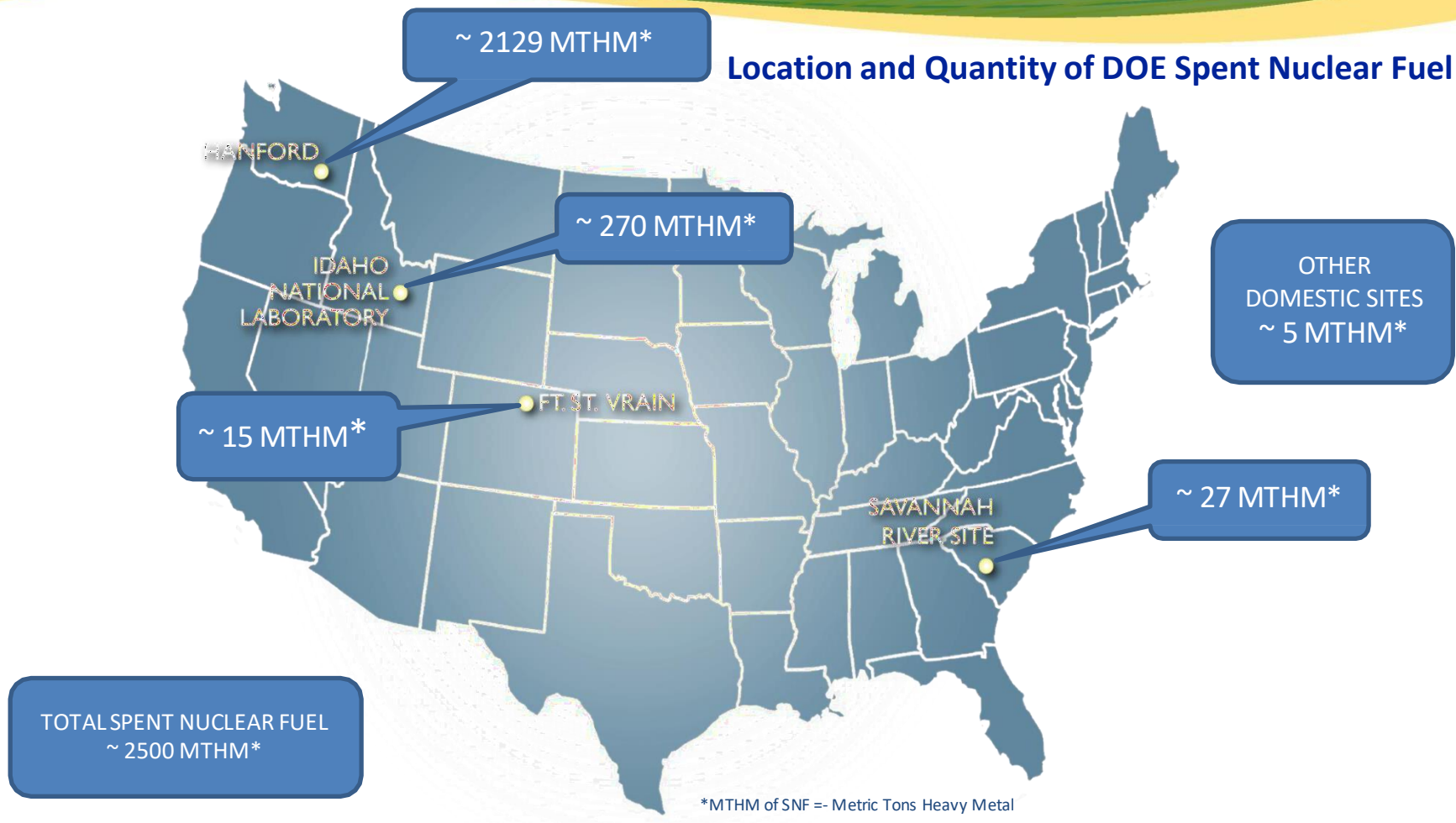


Progress toward start-up of Integrated Waste Treatment Facility



Calcine retrieval demonstration

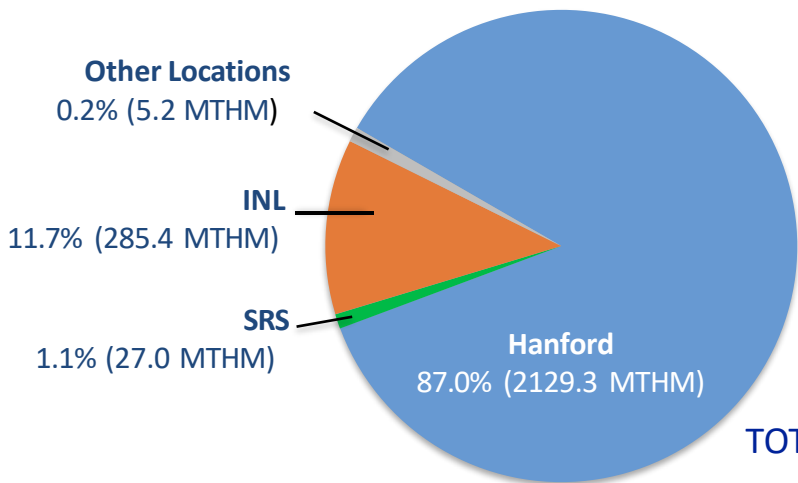
# Spent Nuclear Fuel



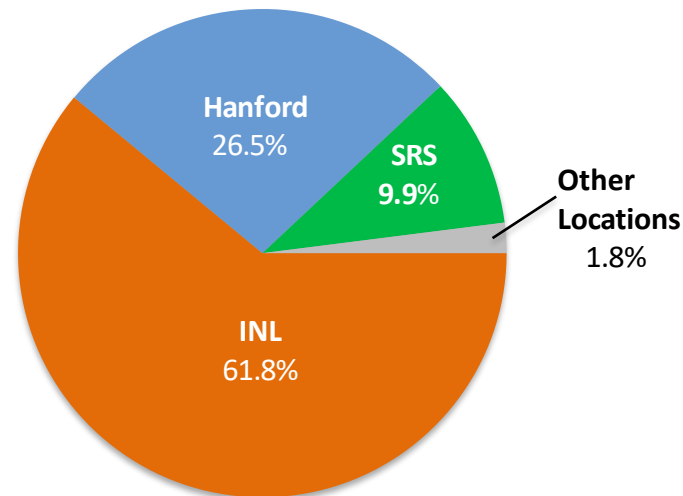
**SNF is safely stored at four DOE sites. Minor amounts are stored at other locations, such as university research reactors.**

# Current SNF by Location

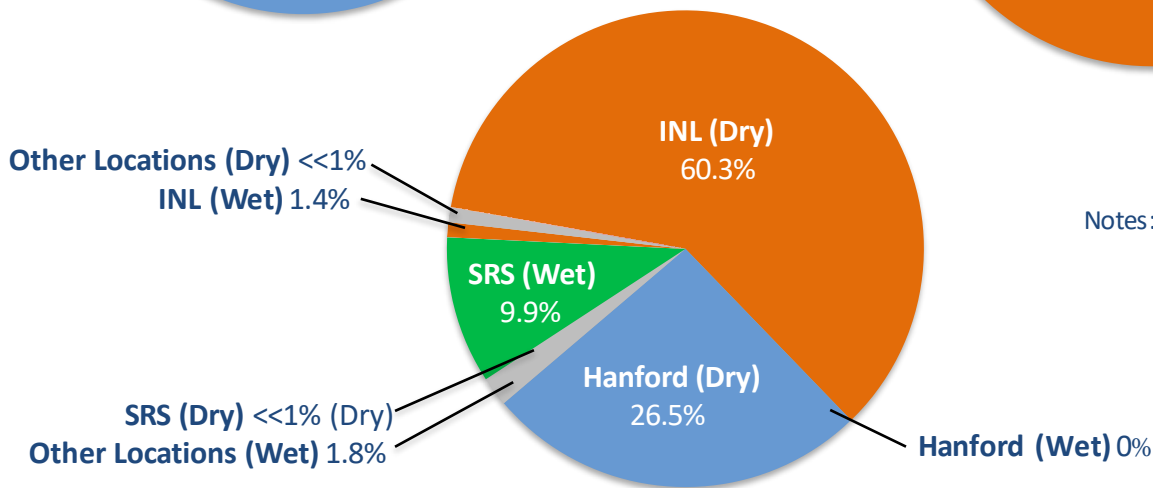
By MASS  
TOTAL: 2446.9 MTHM



By VOLUME



By VOLUME  
(Dry vs Wet)  
TOTAL: Dry 87%, Wet 13%



Notes: Pie Chart data exclude naval fuel.  
All Ft. St. Vrain fuel is included in  
the INL numbers.

**Most SNF by mass is stored at Hanford, by volume at INL.  
Majority of SNF at both sites is in dry storage.**

- Protection of the surrounding communities and the environment are paramount to the Department of Energy's Office of Environmental Management (EM).
- EM will work with the new Administration and the local communities on the path forward for these reprocessing wastes and DOE SNF.
- EM will continue to execute timely decisions and innovative solutions for reprocessing waste and SNF until a disposal facility is available.